

IN THE CLAIMS

1. (Currently Amended) A method for scanning for an object within a region, comprising:

generating a motion control trajectory, by:

calculating a Low Discrepancy Sequence of points in the region; and

generating the motion control trajectory from the Low Discrepancy Sequence of points, by:

generating a Traveling Salesman Path (TSP) from the Low Discrepancy Sequence of points, wherein the TSP includes each point of the Low Discrepancy Sequence of points; and

re-sampling the TSP to produce a sequence of motion control points comprising the motion control trajectory;

~~scanning the region using a Low Discrepancy Sequence scanning scheme~~
scanning the region along the motion control trajectory, and measuring the region at a plurality of points along the motion control trajectory;

determining one or more characteristics of the object in response to said scanning;
and

generating output indicating the one or more characteristics of the object.

2.-4. (Cancelled)

5. (Currently Amended) The method of claim [[4]]1, wherein said generating a Traveling Salesman Path comprises applying Lin's Nearest Neighbor algorithm to the Low Discrepancy Sequence of points to generate the Traveling Salesman Path.

6. (Currently Amended) The method of claim [[4]]1,
wherein the TSP comprises a first sequence of points, wherein the first sequence of points defines a first trajectory having a first maximum curvature;
wherein said re-sampling the TSP comprises manipulating the first sequence of points to produce the sequence of motion control points;

wherein the sequence of motion control points defines a second trajectory having a second maximum curvature which is less than the first maximum curvature;

7. (Original) The method of claim 6,
wherein the sequence of motion control points is a superset of the first sequence of points

8. (Original) The method of claim 6,
wherein the sequence of motion control points comprises a subset of the first sequence of points and one or more additional points.

9. (Currently Amended) The method of claim [[3]]1, wherein said calculating the Low Discrepancy Sequence of points in the region comprises determining a plurality of points, wherein any location in the region is within a specified distance of at least one of the Low Discrepancy Sequence of points.

10. (Original) The method of claim 1, wherein the region has a dimensionality of one of one or two.

11. (Original) The method of claim 1, wherein the region has a dimensionality greater than two.

12. (Currently Amended) A system for scanning for an object within a region, comprising:

a sensor; and

a computer which is operable to couple to said sensor, said computer comprising:

a CPU; and

a memory medium which is operable to store a scanning program;

wherein said CPU is operable to execute said scanning program to perform:

generating a motion control trajectory, by:

calculating a Low Discrepancy Sequence of points in the region;
and
generating the motion control trajectory from the Low Discrepancy
Sequence of points, by:
generating a Traveling Salesman Path (TSP) from the Low
Discrepancy Sequence of points, wherein the TSP includes each point of the Low
Discrepancy Sequence of points; and
re-sampling the TSP to produce a sequence of motion
control points comprising the motion control trajectory;
~~scanning the region using a Low Discrepancy Sequence scanning scheme~~
scanning the region along the motion control trajectory, and measuring the region at a
plurality of points along the motion control trajectory;
determining one or more characteristics of the object in response to said
scanning; and
generating output indicating the one or more characteristics of the object.

13.-15. (Cancelled)

16. (Currently Amended) The system of claim ~~[[15]]~~12, wherein said generating a Traveling Salesman Path comprises applying Lin's Nearest Neighbor algorithm to the Low Discrepancy Sequence of points to generate the Traveling Salesman Path.

17. (Currently Amended) The system of claim ~~[[15]]~~12, wherein the TSP comprises a first sequence of points, wherein the first sequence of points defines a first trajectory having a first maximum curvature;

wherein said re-sampling the TSP comprises manipulating the first sequence of points to produce the sequence of motion control points;

wherein the sequence of motion control points defines a second trajectory having a second maximum curvature which is less than the first maximum curvature;

18. (Original) The system of claim 17, wherein the sequence of motion control points is a superset of the first sequence of points

19. (Original) The system of claim 17, wherein the sequence of motion control points comprises a subset of the first sequence of points and one or more additional points.

20. (Currently Amended) The system of claim [[14]]12, wherein said calculating the Low Discrepancy Sequence of points in the region comprises determining a plurality of points, wherein any location in the region is within a specified distance of at least one of the Low Discrepancy Sequence of points.

21. (Original) The system of claim 12, wherein the region has a dimensionality of one of one or two.

22. (Original) The system of claim 12, wherein the region has a dimensionality greater than two.

23. (Original) A memory medium containing program instructions which are executable to scan for an object within a region, wherein said program instructions are executable to perform:

generating a motion control trajectory, by:

calculating a Low Discrepancy Sequence of points in the region; and

generating the motion control trajectory from the Low Discrepancy Sequence of points, by:

generating a Traveling Salesman Path (TSP) from the Low Discrepancy Sequence of points, wherein the TSP includes each point of the Low Discrepancy Sequence of points; and

re-sampling the TSP to produce a sequence of motion control points comprising the motion control trajectory;

~~scanning the region using a Low Discrepancy Sequence scanning scheme~~
scanning the region along the motion control trajectory, and measuring the region at a plurality of points along the motion control trajectory;

determining one or more characteristics of the object in response to said scanning;
and
generating output indicating the one or more characteristics of the object.

24.-26. (Currently Amended)

27. (Currently Amended) The memory medium of claim [[26]]23, wherein said generating a Traveling Salesman Path comprises applying Lin's Nearest Neighbor algorithm to the Low Discrepancy Sequence of points to generate the Traveling Salesman Path.

28. (Currently Amended) The memory medium of claim [[26]]23,
wherein the TSP comprises a first sequence of points, wherein the first sequence of points defines a first trajectory having a first maximum curvature;
wherein said re-sampling the TSP comprises manipulating the first sequence of points to produce the sequence of motion control points;
wherein the sequence of motion control points defines a second trajectory having a second maximum curvature which is less than the first maximum curvature;

29. (Original) The memory medium of claim 28,
wherein the sequence of motion control points is a superset of the first sequence of points

30. (Original) The memory medium of claim 28,
wherein the sequence of motion control points comprises a subset of the first sequence of points and one or more additional points.

31. (Currently Amended) The memory medium of claim ~~[[25]]~~23, wherein said calculating the Low Discrepancy Sequence of points in the region comprises determining a plurality of points, wherein any location in the region is within a specified distance of at least one of the Low Discrepancy Sequence of points.

32. (Original) The memory medium of claim 23, wherein the region has a dimensionality of one of one or two.

33. (Original) The memory medium of claim 23, wherein the region has a dimensionality greater than two.